

FIG. 1A



FIG. 1B

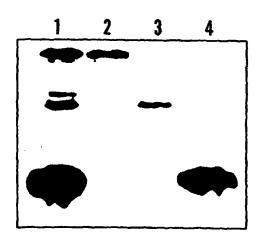


FIG. 1C

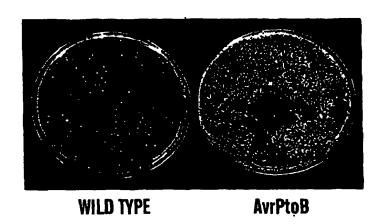


FIG. 2A

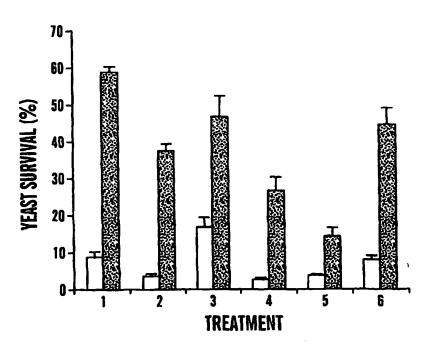


FIG. 2B

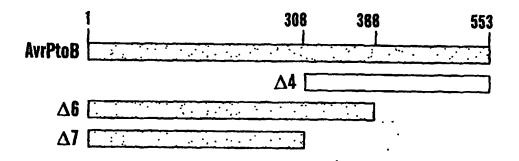


FIG. 3A

	RG-PtoR (Pto/Pto, Prf/Prf)	RG-Prf3 (Pto/Pto, Prf3/Prf3)	RG-Pto11 (pto11/pto11, Prf/Prf)	RG-ptoS (pto/pto, Prf/Prf)
AvrPtoB	+	-	-	
Δ4	_		-	_
△6	+	-	+	_*
Δ7	+	-		_

FIG. 3B

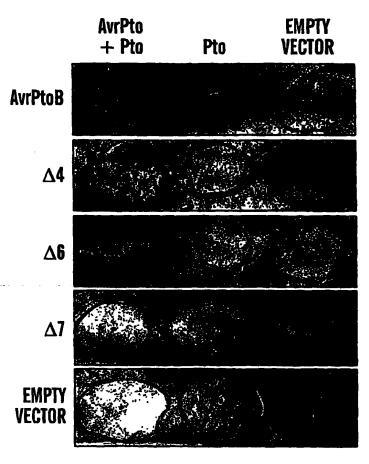
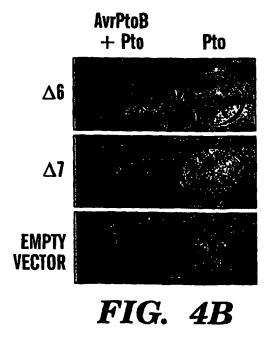
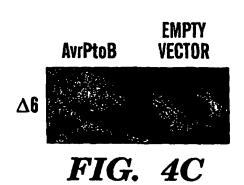
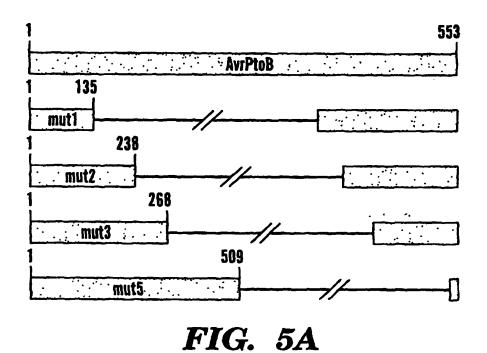


FIG. 4A







	RG-PtoR (Pto/Pto, Prf/Prf)	RG-prf3 (Pto/Pto, prf3/prf3)	RG-pto11 (pto11/pto11, Prf/Prf)	RG-ptoS (pto/pto, Prf/Prf)
AvrPtoB	1	B	0	D
mut1	1	D	D	D
mut2	(0	B	0
mut3	1	D	D	D
mut5	3	D	1	D

FIG. 5B

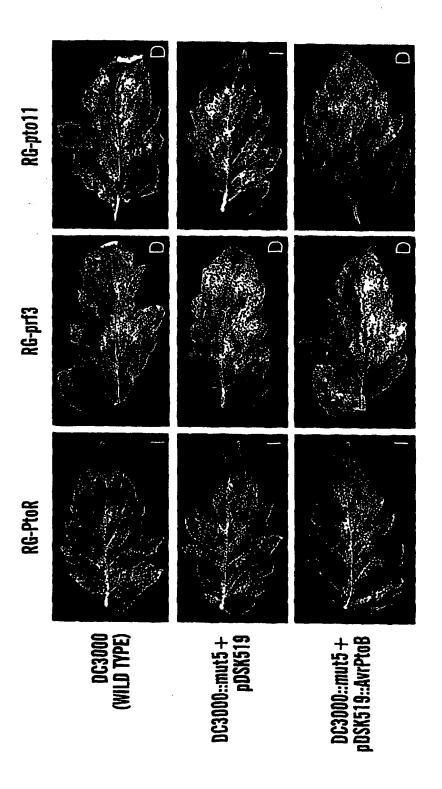


FIG. 6A

DC3000
 DC3000::mut5 + pDSK519
 ▼ DC3000::mut5 + pDSK519::avrPtoB



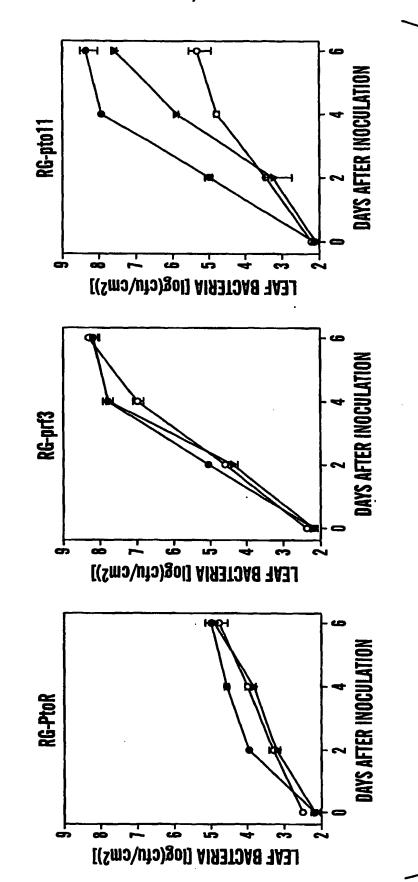


FIG. 6B

7010	143				8/22			PC1/US200
Majority		DC3000 T1		Majority	DC3000		Majority	DC3000 T1 PT23 JL1065
- REMLLRARPLSROTREWVA	98	GRERLSRSTALSROTREWLE - REMLLRARPLSROTREWVA		Q G M P P T A E A G V P I R P Q E S A E	OGMPTAEDASVRRRPQVTAD	Q G M P P T A E A G V P I R P Q E S A E Q G M P P T A E A G V P I R P Q L S A E	AAAPOARAEERHTPEADAAA	A A T P R A E A R R T P E A T A D A A A A P Q A R A L E R H I P E A D A A A A A P Q A R A E E R H T P E A D A A A A A P Q A R A E E R H T P E A D A A
		61 57	22		81	92 92		181 96 96 96
T D P Majority		DC3000 T1	PT23 JL1065	Majority	DC3000	/1 PT23 JL1065	Majority	DC3000 T1 PT23 JL1065
MAGINGAGPSGAYFVGHTDP	10 20	AGINRAGPSGAYFVGHTOPAGINGAGPSGAYFVGHTOP	INGAGPSGAYFVGHTDP INGAGPSGAYFVGHTDP	EPASGGAHGSSSGASSSNSP	30 40 40 P V S G Q A H G S G S G A S S S N S P	E P A S G G A H G S S S G A K S S N S P E P A S G G A H G S S S G A S S S N S P E P A S G G A H G S S S G A S S S N S P	ASOARDR	SO S
							•	<u> </u>

						3/2	2.2					
Majority		DC3000				DC3000 T1		Majority		DC3000 T1	PT23 JL1065	
PSRTVOSILIEHFPHLLAGE Majority	190 200	162 - SRVEONIFROHFPNMPMHG	176 P S R T V Q S I L I E H F P H L L A G E 176 P S R T V Q S I L I E H F P H L L A G E 176 P S R T V D S I L T F H F P H L L A G E 1	LISGSELATAFRAALRREVR	210 220	181 I S R D S E L A I E L R G A L R R A V H	196 LISGSELATAFRAALRREVR 196 LISGSELATAFRAALRREVR	QQEASAPPRTAARSSVRTPE Majority	230 240	201 0 0 A A S A P V R S P T P T	216 Q Q E A S A P P R T A A R S S V R T P E 216 Q Q E A S A P P R T A A R S S V R T P E	
Majority		3000	PT23 1				11 1 PT23 1 JL1065 1	Majórity	•	DC3000 2	23 1965 ·	
SHVRTEGGRTPQALAGTSPR Majority	130 140		HVRTEGGRTPQALAGTSPRHVRTEGGRTPQALAGTSPR	HTGAVPHANRIVOOLV	150 160	R-GAVAHANSIVOOLVSEGA	136 H T G A V P H A N K I V Q Q L V D A G A 136 H T G A V P H A N K I V Q Q L V D A G A 136 H T G A V P H A N R I V Q Q L V D A G A	DLAGINTMIDNAMRRHAIAL	170 180	DISHTRNMLRNAMNGDAVAF	256 DLAGINIMIDNAMANA AIAL	
		# 3	444	=		15				4	はまれ	4

FIG. 7B

FIG. 7C

FIG. 7D

12/22

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<u>ب</u>		Θ 10	FLAGKPEHPMTRETLNAENI Majority		ө и	ity		8		ın
SYSREANKDLVFMDMKKLAQ Majority		DC3000 T1 PT23 JL1065	jor		DC3000 T1 PT23 JL1065	Majority		DC3000	۲,	JL1065
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아	560	PYSQEGNKOLAFMDMKKLAQ SYSREANKDLVFMDMKKLAQ SYSREANKDLVFMDMKKLAQ SYSREANKDLVFMDMKKLAQ	<u> </u>	288	F L A G K P E H P M T R E T L N A E N I F L A G K P E H P M T R E T L N A E N I F L A G K P E H P M T R E T L N A E N I					
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orit		3 800	ority		999 3 965	ority		999		3 865
Majorit		DC3000 T1 PT23	JLIBOS Majority		DC3000 T1 PT23 JL1065	Majority		003800	<u>.</u>	7723 JL1065
K Majorit	900	K DC3000 K T1 K PT23	S Majority	929	S DC3000 S T1 S PT23 S JL1065	E Majority	40	Q DC3000	11 12	E JL1065
F K Majorit	200	K T1 F PT23	L S Majority	9 2 9	L S DC3000 (S T1 L S PT23 (S JL1065	S E Majority	540	S Q DC3000	S E T1	S E J11065
PGFK Majorit	200	L G + K DC3000 P G + K T1 P G + K PT23	E E L S Majority	8 <u>2</u> 8	G E L S DC3000 E L L S T1 E E L S PT23 E E L S JL1065	D M S E Majority	540	T S Q DC3000) M S E 71) M S E JL1065
KPGFK Majorit	200	E L G + K DC3000 K P G + K T1 K P G + K PT23	GEELS Majority	9 2 9	G G E L S DC3000 G E E L S T1 G E E L S PT23 G E E L S JL1065	T D M S E Majority	540	T D T S Q DC3000	T D M S E 71	T D M S E JL1065
NKPGFK Majority	200	EELGFK NKPGFK NKPGFK	FGEELS	829	F G G E L S DC3000 F G E L S T1 F G E E L S PT23 F G E E L S JL1065		540	1 P T D T S Q DC3000	A T D M S E T1	A T D M S E JL1065
	200	E S A S S S S S S S S S S S S S S S S S		250		G K A T D M S E Majority	540	G N P T D T S Q DC3000	GKATUMSE T1	عد عد
	200	E S A S S S S S S S S S S S S S S S S S		92S		AGKATDMSE Majority	540	A GNPTDTSQ DC3000	AGKATOMSET1	عد عد
		E S A S S S S S S S S S S S S S S S S S			H 0 0 1	L A G K A T D M S E Majority		CLAGNPTDTSQ DC3000	SLAGKATOMSE 71	عد عد
	490 500	KADAES KADAAS KADAAS		510 520	H 0 0 1	I G L A G K A T D M S E Majority	530 540	IGLAGI	I 6 L A G F	1 6 L A G F
		KADAES KADAAS KADAAS			H 0 0 1	VIGLAGKATDMSE Majority		IGLAGI	I 6 L A G F	1 6 L A G F
		ISKADAES VSKADAAS VSKADAAS			H 0 0 1	OVIGLAGKATDMSE Majority		IGLAGI	I 6 L A G F	1 6 L A G F
		RIISKADAES RIVSKADAAS RIVSKADAAS RIVSKADAAS			H 0 0 1	V Q Q V I G L A G K A T D M S E Majority		IGLAGI	I 6 L A G F	1 6 L A G F
		LRTISKADA E S LRTVSKADAA S LRTVSKADAA S			H 0 0 1	SVOOVIGLAGKATDMSE Majority		POQVIGLAGI	I 6 L A G F	1 6 L A G F
		OLRTISKADAES KLRTVSKADAAS KLRTVSKADAAS			H 0 0 1	TSSVQQVIGLAGKATDMSE Majority		POQVIGLAGI	SSDQQVIGLAGE	عد عد
FNKLRTVSKADAASNKPGFK Majorit		FSQLRTISKADAES FNKLRTVSKADAAS FNKLRTVSKADAAS	DAADHP-DDATQCL		H 0 0 1	L T S S V Q Q V I G L A G K A T D M S E Majority		LSNPDQQVIGLAGI	LTSSDQQVIGLAGA	
		OLRTISKADAES KLRTVSKADAAS KLRTVSKADAAS	DAADHP-DDATQCL		U D V T H C I D D A T Q C I D D A T Q C I	LTSSVOOVIGLAGKATDMSE Majority		LSNPDQQVIGLAGI	LTSSDQQVIGLAGA	1 6 L A G F

FIG. 7E

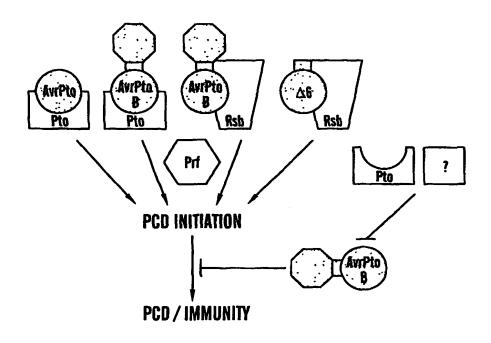


FIG. 8

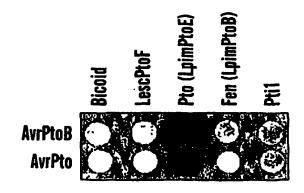


FIG. 9A

121 181 241 241 301 GGACGTGÄGAGGCTTTCACGATCCACGCGCGCTGTCGCGCCCAAACCAGGGAGTGGCTGGAG RERLS RSTALS ROTT REW LE CAGGGTATGCCTACAGCGGAGGATGCCAGCGTGCGTCGTAGGCCACAGGTGACTGCCGAT Q G M P T A E D A S V R R R P Q V T A D 81 421 121 541 1601 ATCAGCCAGACTCGCTATCGAGCTCCGTGGGGCGCTTCGTCGAGCGGTTCAC

I S R D E L A I E L R G A L R R A V E

CAACAGGCGGCTCAGCGCAGTGAGGTCGCCCAACACCGGCCAGCCCTGCGGCA

Q Q A A S A P V R S P T P A R L R A C

TCATCATCGGGCAGCAGTCAGCGTTCTTTATTTGGACGGTTTGCCCGTTTGATGGCGCCCA

B S G G S S Q R S L F G R F A R L R A P

AACCAGGGACGGTCGTCGAACACTGCCGCCTCTCAGACGCCGGTCGACAGGAGCCCGCCA

N Q G R S S N T A A S C T P P P 781 841 AACCAGGACGTCGTCGAACACTGCCGCCTCTCAGACGCCGCTCGACAGGAGCCCGCCA
N Q G R S S N T A A S Q T P V D R S P P
CGCGTCAACCAAAGACCCATACGCGTCGACAGGGCTGCGATGCGTAATCGTGGCAATGAC
R V N Q R P I R V D R A M N R G N D
GAGGCGGACGCCGCGGCTGCGGGGGTTAGTACAACAGGGGGTCAATTTAGAGCCCTGCGC
E A D A A L R G L V Q Q G V N L E E L R
ACGGCCCTTGAAAGACATGTAATGCAGCGCCTCCCTATCCCCCTCGATATAGGCAGCGCG
T A L E R H V M Q R L P I P L D I G S A
TTGCAGAATGTGGGGAATTAACCCAAGTATCGACTTGGGGGAAAGCCTTGTGCAACATCCC
L Q N V G I N P S I D L G E S L V Q R P
CTGCTGAATTTGAATGTAGCGTTGAATCGCATGCTGGGGCTGCGTCCCAGCGCTGAAAGA
L L N L N V A L N R M L G L R P S A E R 301 1081 1321 1341 1201 1261 1361 1321 1381 421 1441 1501 1561 1561 1621 1621 1681 541 GCCCATCAAGCTAGCGCCGACAGCGCTCACTGCCACTTCGAAGGTCGGCGTGGAAAGCTC CCGAGTCACGGACTTCGCACCTGCGTCAGGGCTCAGTCCATGCGCTCGGGGTAGGTCATC



- 52% identity of amino acid between AvrPtoB and VirPphA
- Black boxed letters: Putative hrp-box
- Red boxed letters: Computer suggested N-myristoylation site
- 3- 8 GINRAG 1.
- 2. 25- 30 **GQAHGS**
- 29- 34 3. **GSGSGA**
- 31- 36 4. **GSGASS**
- 33- 38 5. GASSSN
- 82- 87 6. Gmptae
- 7. 140-145 GADISH
- 8. 278-283 GNDEAD
- 9. 288-293 GVSTTG 10. 294-299
- GOFRAL 11. 325-330 GINPSI
- 12. 353-358
- **GLRPSA** 13. 379-384 GTRATR
- 14. 412-417 **GVRQAV**
- 15. 480-485 **GGELSL**
- Black bold letters: Amino acid identical with amino acid of VirPphA
- Blue arrow: Fusion point of truncated AvrPtoB with LexA of prey vector
- 1. 70 AA; HinP11
- 2. 112 AA; MspI
- 3. 121 AA; AciI

FIG. 9B (CONT.)

ALIBATITUTE ALIERE /--- - ---

ALIGNMENT OF THE AMINO ACID SEQUENCES OF AVIPTOB AND VIPPPha

BlastX results Score Sequences producing significant alignments: (bits) Value gi 5702216 gb AAD47203.1 AF141883_1 (AF141883) VirPphA [Pse... gi 5702219 gb AAD47206.1 AF141883_4 (AF141883) unknown [Pse... gi 7512219 pir | T18535 high molecular mass nuclear antigen ... gi 15236788 | ref | NP_194968.1 | (MC_003075) putative protein [... gi 5420387 | emb | CAB46679.1 | (MC_003075) proteophosphoglycan [... gi 6322209 | ref | NP_012284.1 | (MC_001141) Required for invasi... gi 14251109 | ref | NP_116471.1 | (MC_002794) t120 [Tupaia herpe... gi 4507349 | ref | NP_003176.1 | (MM_003185) TATA box binding pr... gi 17546705 | ref | NP_520107.1 | (MC_003295) PROBABLE TRANSMEND... gi 15805485 | ref | NP_294181.1 | (MC_001263) hypothetical prote... gi 17487943 | ref | XP_036528.2 | (XM_036528) serine/arginine re... 500 e-140 70 6e-11 50 6e-05 45 0.002 45 0.003 44 0.005 43 0.008 42 0.013 42 0.013 42 0.013 42 0.018 >gi|5702216|gb|AAD47203.1|AF141883_1 (AF141883) VirPphA (Pseudomonas syringae pv. phaseolicola) Length = 539 Score = 500 bits (1287), Expect = e-140 Identities = 303/581 (52%), Positives = 368/581 (63%), Gaps = 28/581 (4%) Frame = +1Query: 1 MAGINRAGPSGAYFVGHTDPEPVSGQAHGSGSGASSSMSPOVOPRPSNTPPSNAPAPPPT 180 M GIN AGPS ++. TD EPV+ + H S ASS+NSP++ P S MPGINGAGPSNFFWOMRTDGEPVTEREHDSSRSASSANSPELPPPAS-----PAES 51 Sbjct: 1 Query: 183 Grerlsrstalsrotremieogmptaedasvrrrpovtadaatpraearrtpeatadasa 360 GR+RL RS+ALSROTREMLE A A V+ ATP AEAR++PEA Sbjct: 52 GRORLLRSSALSROTREMLE----ATPARVO-----GATPPARARQSPEAQ---- 93 Query: 361 PRRGAVAHANSIVOOLVSEGADISHTRIMLRNANIRGDAVAFSRVEONIFROHFPRIMPRING 540 A IVQ+LV GAD+++ R MLRN M+ +AVAFSRVE++I QHFPNMPM G
-----QAERIVQELVRGGADLNNVRTMLRNVMLEDNAVAFSRVERDILLQHFPNMPMTG 146 Sbjct: 94 Query: 541 ISRDSELAIELRGALRRAVHQQAASAFVRSPTPTPASPAASSSGSSQRSLFGRFARLMAP 720 is ds la blr lr+ v qq r + tpa a sssgssgrel gr lm p Sbjct: 147 ISSDSVLANELRORLROTVROQ-----RIQSSTPARLADSSSGSSQRSLIGRSTMLMTP 200 Query: 721 NQGRSSNTAASQTPVDRSPPRVNQRPIRVDRAAMRNRGNDEADAALRGLVQQGVNLEHLR 900 + SS+ AAS+T VDR P ++ R+ AA N ++ + ALR L Q+GV++E LR GRSSSSSAAASRTSVDRHPQGLDLESARLASAARHNHSANQTNEALRRLTQEGVDMERLR 260 Sbjct: 201 TALERHVMQRLPIPLDIGSALQNVGINPSIDLGESLVQHPLIMLNVALNRMLGLRPSAER 1080 Query: 901 T+L R++M P+P D+ AL++VGINP I SLV HP+LN + ALNRML R + TELGRYIMSLEPLPPDLRRALESVGINPFIPEELSLVDHPVINFSAALNROLASROTITN 320 +P + A + RR P + RA RL VMP + Sbjct: 321 SPELPPLASSAESGRRRLLRSPPLLSGQREWIEGSNRQEAEPQSSRLNRAVRLAVMPPQN 380 Query: 1177 DYEMNVAYGVRLLNLNPGVGVRQAVAAFVTDRAERPAVVANIRAALDPIASQFSQLRTIS 1356 + E+MVAY +RL LNPG V + VA+F+TD A R VV +IRAALD IA QFSQLRTIS Sbjct: 381 ENEONVAYAIRLRRLNPGADVSRVVASPITDPAARQQVVNDIRAALD-IAPQFSQLRTIS 439 Query: 1357 kadaeseelgfkdaadhhtddvthclfggelslsnpdqqviglagnptdtsqpysqegrk 1536 KADAESEELGP+DAAD H D+ T CLFG ELSLSNPDQQVIGLA NPTD QPYSQE NX Sbjct: 440 KADAESEELGPRDAAD-HPDNATSCLFGEELSLSNPDQQVIGLAVNPTDKPQPYSQEVNK 498 Query: 1537 DLAFMONKKLAQFLAGKPEHPMTRETLANAENIAKYAFRIVP 1659 L PMDMCKLAQ+LA KPEHP+ R+ L+A+NIAKYAP+IVP

FIG. 9C

Sbjct: 499 ALTPMENKKLAGYLADKPEHPLNRGRLDAKNIAKYAFKIVP 539

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	CHIMERIC	INTERAC AvrPto	:TION WITH: AvrPtoB
A		YES	YES
B		NO	NO
D		NO	NO
E		NO	NO
F		NO	NO
G		YES	YES
H		NO	NO
	7770 404		

FIG. 10A

		INTERACTION WITH: AvrPto AvrPtoB
FPB		YES YES
FPB2	133 217	YES YES
TFDZ	188 217	YES YES
FPB3	200 217	YES YES
FPB4	202 217	YES YES
	202 209	110

FIG. 10B

	a. ~			INTERACT AvrPto	ION WITH: AvrPtoB
	\$ 22		•	MILLO	AVII LUD
Pto 🖿	KGTL	GYIDPI	R T E I K G R —	YES	YES
Fen □	— RGNI	GYIAPI	E YAUM GQ -	NO	NO
FPB3 □	_ = ==	==	R Y FIK G R -	YES	YES
FPB4 □			E YAUW GQ -	YES	YES
FPB3(K202R)		GYIDP		YES	YES
FPB3(T204N) □		GYIDP		NO	NO
FPB3(L2051)			RYFIKOR -	YES	YES
FPB3(D209A)			BYFIKOR —	YES	YES
P(T204N)			BYFIKGR -	NO	NO
P(L205I)		=	EYFIKGR —	YES	YES
F(N204T,1205L)		•	E Y ALW GO -	YES	YES
F(N204T)			E Y NIIM GQ -	YES	YES
F(1205L)			e yaum co —	NO	NO
		FIG	10C		

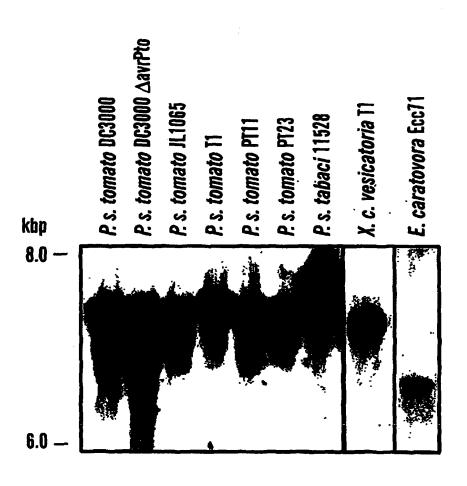


FIG. 11

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P. fluorescens (Hrp+, avrPtoB)

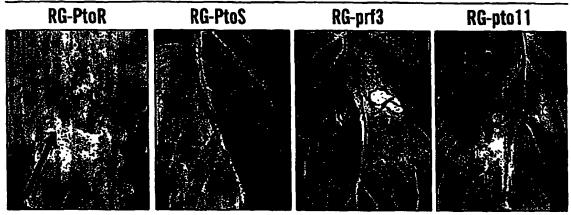


FIG. 12A

Agrobacterium (35S::avrPtoB)

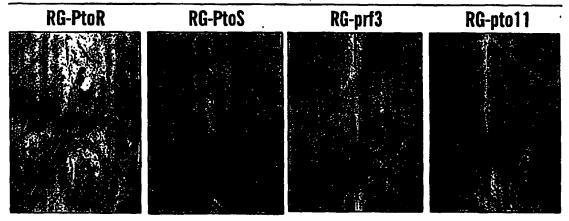
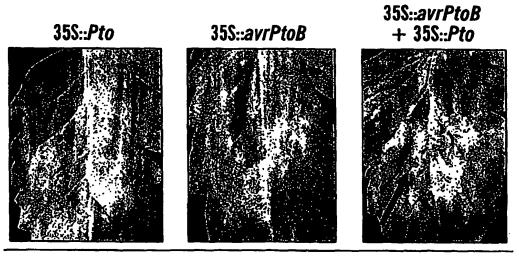


FIG. 12B



RG-pto11

			20, 22	Subregior
			GGQAHGSGSGASSSNSPQVQPRPSNTP SRMAHQVNSPDRVSNNSGDE	I, II
P SNAPAPPI D N VTSSQLI	Levrhollesa	GLPRI	TREWLEQGMPTAEDASVRRRPQVTAD OQHEFVSSQAPQSLRNR	111
		APRRO	Savahansivqqlvsegadishtrnml	
RNAMNGDAV	/afsrveqnif Yshtqrtld	'RQHFI MADM(PNMPMHGISRDSELAIELRGALRRAVH QHRYMTGAS	IV
QQAASAPVE	RSPTPTPASPA	BESEA	gssqrslfgrfarlmapnqgrssntaa	·
SQTPVDRSI	PPRVNQRPIRV	DRAAI	MRNRGNDEADAALRGLVQQGVNLEHLR	
TALERHVM(QRLPIPLDIGS	YT QN	ATA A A VGINPSIDLGESLVQHPLLNLNVALNR-GINPGMLPHENVD	V
	eraprpavpva ITDW		SRRPDGTRATRLRVMPEREDYENNVAY	VI
GVRLLNLNI	PGVGVRQAVA	FVTD	RAERPAVVANIRAALDPIASQFSQLRT	VII
ISKADAESI	EELGFKDAADH	HTDD	VTECLFGGELSLSNPDQQVIGLAGNPTQHAMGIHADIP † ca40	VIII
DTSQPYSQI PSPERFVA:	egnkdlafmon Imn	IKKLA(QFLAGKPEHPMTRETLNAE PSGSIRMSTLSPS	iX
		1	FIG. 13A	
	Consensu	s :	SXRXXLXXSXXLXRXXXE	
	AvrPto	38	SVRHQLAESAGLPRDQHE 55	
	AVTPtoB	60	TGRERLSRSTALSRQTRE 77	
	VirPphA		SGRQRLLRSSALSRQTRE 68	
	AvrRpt2	49	ETRALLATKTVLGRHKIE 66	
	AvrRps4	38	TTTSIAQASEGLQRPGAT 55	
	AvrXa10	61	SPAFSAGSFGDLLRQFDP 78	
	AvrPpiB	41	IEEHVADRLSDLGRPDGG 58	
	AvrPphF	33	VGQYTLTSIHQLSSEERE 50	
	AvrBs1	49	RKRVIKENIAALHTSSLE 69	
	AvrB	33	SQRQLEVYDQCLIGAARW 50	
	Arrena	A 2	SDSOMESTINGS ED	

FIG 12R

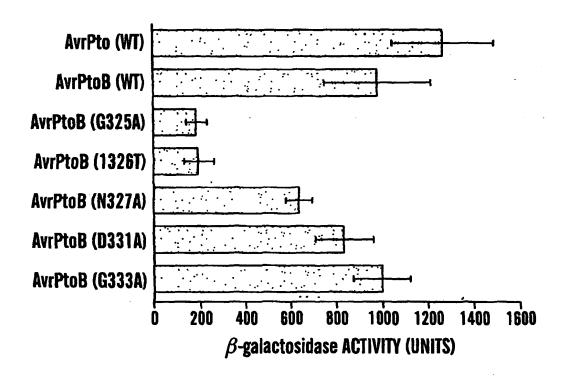
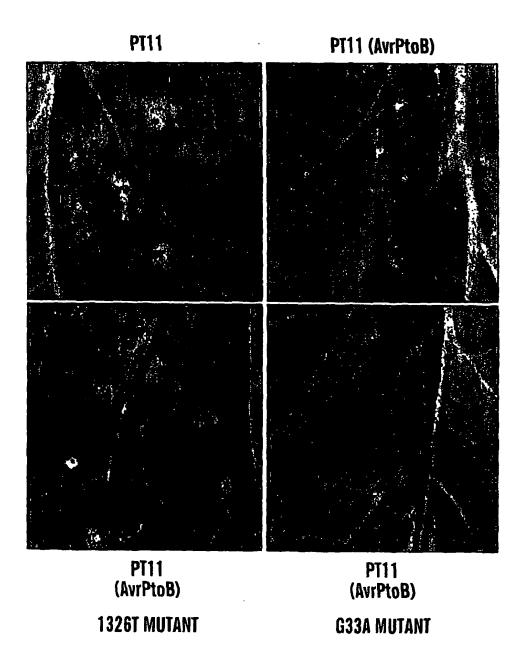


FIG. 14



ALL LEAVES ARE Rio-Grande PtoR(Pto/Pto)

FIG. 15

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